Name: ______________________________

GCSE (1 – 9)

Recurring Decimals to Fractions

Instructions

- Use **black** ink or ball-point pen.
- Answer all questions.
- Answer the questions in the spaces provided
– *there may be more space than you need.*
- Diagrams are **NOT** accurately drawn, unless otherwise indicated.
- You must **show all your working out.**

Information

- The marks for each question are shown in brackets
– *use this as a guide as to how much time to spend on each question.*

Advice

- Read each question carefully before you start to answer it.
- Keep an eye on the time.
- Try to answer every question.
- Check your answers if you have time at the end

1 Convert $\frac{2}{9}$ to a decimal.

....

(Total for question 1 is 2 marks)

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2 Convert $\frac{4}{11}$ to a decimal.

....

(Total for question 2 is 2 marks)

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3 Convert $\frac{5}{6}$ to a decimal.

....

(Total for question 3 is 2 marks)

4 Prove algebraically that the recurring decimal $0.\dot{8}$ can be written as $\frac{8}{9}$

(Total for question 4 is 2 marks)

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5 Prove algebraically that the recurring decimal $0.4\dot{7}$ can be written as $\frac{43}{90}$

(Total for question 5 is 2 marks)

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6 Prove algebraically that the recurring decimal $0.2\dot{3}$ can be written as $\frac{7}{30}$

(Total for question 6 is 2 marks)

7 Write $0.1\dot{6}$ as a fraction in its simplest form.

....

(Total for question 7 is 2 marks)

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8 Write $0.2\dot{7}$ as a fraction in its simplest form.

....

(Total for question 8 is 2 marks)

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9 Write $0.4\dot{3}$ as a fraction in its simplest form.

....

(Total for question 9 is 2 marks)

10 Prove algebraically that the recurring decimal $0.6\dot{8}\dot{1}$ can be written as $\frac{15}{22}$

(Total for question 10 is 2 marks)

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11 Prove algebraically that the recurring decimal $0.\dot{2}1\dot{6}$ can be written as $\frac{8}{37}$

(Total for question 11 is 2 marks)

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12 Prove algebraically that the recurring decimal $0.\dot{1}2\dot{6}$ can be written as $\frac{14}{111}$

(Total for question 12 is 2 marks)

13 Write $3.2\dot{5}\dot{4}$ as a fraction in its simplest form.

....

(Total for question 13 is 3 marks)

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14 Write $2.7\dot{4}\dot{2}$ as a fraction in its simplest form.

....

(Total for question 14 is 3 marks)

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15 Write $3.\dot{5}9\dot{4}$ as a fraction in its simplest form.

....

(Total for question 15 is 3 marks)

16 x is an integer such that $1 \leq x \leq 9$

Prove that $0.\dot{0}\dot{x} = \frac{x}{99}$

....

(Total for question 16 is 2 marks)

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17 Work out: $0.\dot{5}\dot{4} \times 0.\dot{5}$

....

(Total for question 17 is 4 marks)

18 Work out: $0.\dot{3}\dot{9} \div 0.\dot{6}\dot{3}$

....

(Total for question 18 is 4 marks)

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19 Work out: $0.0\dot{7} \div 0.\dot{1}8\dot{5}$

....

(Total for question 19 is 4 marks)